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UNIVERSITY OF TORONTO  
UNIVERSITY EXTENSION

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# Course in BIOCHEMISTRY

**SESSION 1963-64**

*offered in co-operation  
with the*  
CHEMICAL INSTITUTE  
OF CANADA

## BIOCHEMISTRY

### WEDNESDAY

### 20 LECTURES

The course, offered in co-operation with the Chemical Institute of Canada, will be primarily of interest to graduate chemists and chemical engineers with little previous acquaintance with biochemistry. The course will therefore, be introductory in nature although a strong chemical background will permit rapid progress to a relatively advanced level.

LECTURER: Professor G. R. Williams,  
Department of Biochemistry,  
University of Toronto.

TIME: 7:30 p.m. on Wednesday evenings  
commencing October 9–December 11  
January 8–March 11

PLACE: Room 252, Mechanical Building

FEE: \$40.00

#### Registration:

By mail or in person at 84 Queen's Park, 9 a.m. to 5 p.m. daily except Saturdays. Information may be obtained by telephoning 928-2393, 928-2394, 928-2395 or 928-2396.

## OUTLINE

Revision of pertinent aspects of the physical chemistry of acids and bases. Chemistry of macromolecules of biological interest and their constituent units.

Enzymes, kinetics and mechanism of action, co-enzymes and vitamins, free energy of hydrolysis as a key parameter in biological energetics.

Routes of metabolism of the major foodstuffs, terminal oxidation and linked phosphorylations, biosynthetic reactions in general. The interlinkage and control of metabolic pathways.

Higher levels of biological control, hormones, biochemical genetics. The biochemistry of the gene and protein synthesis.

Specialised topics such as the chemistry of muscular contraction and photosynthesis.